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(C.E.N. Marino)

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Preliminary findings on user's perceptions about the management of, and conflicts over, natural resources in the maritime zone of the Northeast Corridor:

The following report is based on data - gathered through interviews, focus groups, community meetings, and field notes - that describes the most pressing conditions and dynamics ruling over the management of the reserves that are within the territory of the North East Corridor's maritime zone, *Arrecife de la Cordillera* and *Canal de Luis Peña* reserves. The participants belong to the following interest groups: Artisanal, small-scale commercial fishers, government agencies (DNER), local schools (teachers from Culebra and Fajardo), environmental NGO's, Divers' Association, and a journalist specialized in the region.

Following the research objectives, findings will be summarized in bullet-point form and divided into the following categories: Resource-use conflicts; Management perspectives; Participatory issues; Governance; Suggestions for the future management of the zone.

Arrecifes de la Cordillera Natural Reserve



Resource-use conflicts:

- Fishermen complain that some divers do not practice the necessary security measures, and put themselves and others at risk. There have been several accidents with fisher's boats and with jet-ski drivers, where divers have been heavily injured and, on one occasion, killed. With no marks (like flags) in the water indicating the presence of divers, it is very difficult to identify them.
- There is a shared perception among different key-players that recreational fishers engage in illegal commercial exchange. Commercial fishers perceive that recreational fishers are not being monitored and this gives them free range to sell some of their catch whenever they will. According to commercial fishers, while they (commercial fishers) are constantly watched, there is much more impact on resources from recreational fishing.
- Commercial fishermen, especially those with vast experience working in the territory covered by the reserve, complain about the overwhelming presence of Marinas in the municipality of Fajardo. Having the highest concentration of Marinas in Puerto Rico, and the biggest Marina in the Caribbean, the overwhelming presence of marinas is diminishing marine life in the area, according to fisher's perceptions. Furthermore, fishermen perceive that the increasing amount of boats and the noises they produce, is related to the decreasing number of fishes in the area. This, in turn, affects their way of life and their fishing practices, since now they must travel farther away in order to find a better catch.
- Over all, there is no consensus among key stakeholders about the main factors inducing ecosystem degradation. There is also a general perception that owners of private boats increasingly pack fishing areas during the weekends, and at certain seasons of the year. As a journalist argued, most of the pressure that affect natural resources come from "weekenders" and not necessarily from fishers or tourist concessionaires. According to him, the pressure of weekenders toward the ecosystem is "devastating".
- Owners of private boats gather and celebrate a yearly all-weekend party called, "Little Havana", in one of the cays of the zone. This is perceived as affecting tourist activities and the eco-system.
- According to tourist concessionaires, the existence of boat drivers that organize trips to the cays without the required permits and license is a real problem. However, there are concerns from NGO's and fishermen,



that these types of requirements are too expensive and “foreign”, in terms of the habitual ways of doing and understanding things. Therefore, this can become an issue of justice, since it might negatively affect the already socially and economically disadvantaged population, like most local fishermen.

- Many commercial fishers feel discriminated against by the police force. A community and fishermen’s leader, referring to the Joint or United Forces of Rapid Action (or “FURA”, in Spanish), of the Puerto Rico Police, argues that police activity in the area “...is an everyday persecution.”
- Commercial fishers complain about the amount of laws and restrictions that conflict with their fishing practices and lifestyle. Also, as suggested above, they criticize the way in which – according to their perception - guards concentrate on the fishers’ activities and not so much on other groups. The following are some of the different regulations that fishers face in their everyday life activities:

Laws related to the “vedas” or seasonal closures: “carrucho”, lobsters, yellowtails, and grouper

Laws related with fishing techniques

Laws related with distances and fishing locations

Laws about how to fish and extract “carrucho” (conch)

Laws on the size of the fishing chord

Rules on number of fishes or size of catch

Rules related to the fishing of lobsters and their size

Laws on the use of motors

License and permits

- While artisanal-commercial fishers are highly regulated in their fishing practices, recreational fishers do not have a clear set of regulations for their fishing activities. According to DNER’s personnel and commercial fishers, recreational fishers do engage in activity that is considered illegal, like selling their catch (tunas, marlins, and mostly mahi mahi), picking lobsters and couch fish without restrictions, among other unregulated practices.
- On the other hand, a journalist specialized in the area perceives that there is actual prejudice (related to socio-economic status) from rangers against weekenders because they look for many ways to stop and inspect them. This suggests that the reserve is embedded in a web of social relations and power dynamics structured by social class and other socio-historic and cultural meanings. These realities make the efficient and successful management of the area a real challenge.



Management perspectives:

- There is a strong perception among key players that DNER lacks commitment with the management of the reserve, although there already exists some collaboration between community residents and local tourist guides and government officials.
- According to a DNER official, “Rangers receive workshops, yet they do not change. Change must come from the top. Rules do not really matter if there is no will to follow them.” According to the same participant, the rangers have existed for the last forty years, therefore, “if they do not know the rules and protocols of intervention by now, it is not a coincidence, but set by design.” Also, as an example of this ‘design’, this DNER official suggests that the lack of engagement on the area is set on purpose. As an example of this, he suggests that DNER have more rangers than the state of California, yet “if there are only five rangers in the area of the reserve, it is because that is the decision of the agency, it is because it is not [part of] the agency’s priorities.”
- DNER’s representative: natural reserves work as republics distanced from the regional work. “We are in charge of this area but there is not one permanent position (job) for it, except for the guards.”
- According to a DNER’s official, fishes have been diminishing for decades: “it is a total chaos, the public is aware of it. Every time they go out to fish, they recognize it, and the DNER does not take action in order to change it, even if we count on such resource to do it.”
- The lack of monitoring of the reserve becomes more acute during tourism’s high season, when there is a heavy demand for recreation activities in the zone.
- There is a common perception among participants that the data informing decisions related to fishing prohibitions and fisheries’ management might be spurious.
- According to a DNER high-ranking official, a lack of knowledge and understanding about the fishing practices and maritime resource uses of recreational fishers hinder any response and management decision of the area. Furthermore, since there is no license requirement for recreational fishers, it is difficult to gather a more rigorous account and information.
- Rangers are unaware of the existence of any written protocol for their intervention with lawbreakers or any person that is affecting maritime



resources with his/her activity. Rangers complain that during the last years there has been a significant decrease of personnel. These changes are related to the law that declared a state of fiscal emergency and created an “integral plan” to stabilize the economy (Ley #7 del 2009). The plan included firing thousands of government employees. They argue that this affected most services in government agencies, including the monitoring of natural reserve covered by DNER.

- Rangers concentrate more on safety issues than on ecological infringement. The lack of a general and basic knowledge and understanding of the eco-system, ecological impacts of different practices, and local, regional, and world ecological contexts (Global Warming and its effects) contribute to this lack of emphasis.

Participatory issues:

- Representatives of the diving industry complain about their lack of participation in discussions and decisions related to the area. They have previously solicited participation with DNER personnel but do not receive an answer.
- More meetings should elicit the participation from other members of the different sectors (fishers, teachers, etc.), not just representatives from each group.
- More community engagement is needed for a viable management plan.
- Fishers feel that their vast knowledge is not taken into consideration. Restrictions without explanations come from the top without consulting with them. Having an array of maritime resources and sea knowledge that could clarify and illuminate many DNER’s decisions, local fishers are not acknowledged by the agency. Preferring the perspectives of biologists and other experts, DNER do not collect the fisher’s perceptions of the eco-system, thus further alienating them from future collaborations related to the management and analysis of the eco-system.

Governance:

- There is a communication gap between scientists, policy makers and fishers. Research does not reach or go to the commercial fishing communities. There are important gaps in the information used for decision-making about fishing practices.



- DNER divides the Puerto Rican archipelago into several regions. The Northeast Corridor is located within the Humacao region. The Humacao region is the biggest region of the whole territory, and the one with the least amount of guards and supervision personnel. The designation of a management official is crucial.
- The complexity of the legal regime in the zone could be highly constraining for local commercial fishers. It seems that fishers live in a labyrinth of surveillance and regulations designed and enforced by different agencies like DNER, FURA, Fish and Wild Life Services, Coast Guard, NOAA. As one participant argued: “Sometimes in a single trip they [commercial fishers] are detained four different times. What can s/he fish during that day? He already lost the day, lost the gasoline, lost everything and could not fish. And who returns him the time and money inverted [during that day]?...” Living through one of the worst economic crisis in Puerto Rico’s history, this situation becomes even more worrisome.
- There is a bureaucratic conundrum in the way DNER’s deals with commercial fishing’s license. The lack of communication between the agency and fishers, the constant charging for repeated procedures, makes it very difficult for artisanal-commercial fishers to legalize their way of life, since it is both time consuming and expensive.

Suggestions for the future management of the zone:

- There is concern about drug-related illegal activities in the territory of the reserve. What procedures should be taken into consideration if a person identifies drug trafficking activity?
- According to most participants, fishermen should get permission to be able to serve as tourist guides and drivers to Icacos (island/cay). They should receive a concession for this type of work.
- Journalist: “To develop a degree of sensibility in a person without sensibility. That is management. What is needed is not a biologist, but an environmental educator.”
- There is a real need to develop educational mechanisms that maintain a constant relationship of orientation and conversation with commercial fishers. DNER’s must explain the ecological reasons behind their regulations and decisions, since they directly affect the lives of commercial fishers. Law enforcers must have a deeper and more acute knowledge and understanding of maritime species (coral reefs, fishes,



turtles, among other) -their diversity and characteristics, their life and growth stages and cycles, their reproduction patterns, among others crucial dynamics necessary for a well informed, rigorous, and balanced monitoring of the zone. Both DNER's officials and rangers agree on the need for further and systematic education through workshops, lectures and other activities. Lack of understanding about the reasons behind a regulation related to different species, makes its implementation a harder process. When rangers know why they are regulating a specific fishing or anchoring practice, for example, they feel more confident and empowered. Furthermore, their intervention can turn into a pedagogical opportunity with the maritime resources users.

Canal de Luis Peña Natural Reserve

Resource-use conflicts:

- There is a general consensus of illegal fishing in the area. Furthermore, some participants allege that there are rangers that engage in illegal fishing inside the reserve.
- According to some participants there are divers that injure the reef with their activities. However, there is not enough data to support these allegations.
- According to some participants, tourist operators (legal and illegal) visiting the area, on occasions, take the sea turtles with their hands and take photos with them.
- The high number of kayaks in Tamarindo beach sometimes covers most of the shore. This is perceived as suggesting that there are too many tourist concessionaires for the area's capacity.
- In "Tortuga" (name of a beach in Culebrita): Some tourist concessionaires are renting kayaks and bringing more people than it is adequate because of security measures and responsible uses of the area's resources.
- In Culebra: there is conflict between two different fisher's associations around the control of the local fishery.

Management perspectives:

- According to one NGO in Culebra, some fishers engage in illegal fishing and sell their catch directly to the restaurants. Arguably, "they are wiping" the lobsters out. Also, according to this NGO representative, the issue of "transparency" is crucial in the enforcement



process. In other words, enforcement must be objective, strict, and with clear descriptions of the regulations and penalties.

- However, there is a strong perception that those in charge of the reserve on the ground do not know the rules.
- Culebra is a very close community. The fact that rangers are from Culebra makes the regulation's enforcement a difficult process.
- Rangers and biologists and other DNER do not meet among themselves.
- DNER ranger: on occasions permits are given without previous consultation with the guards. These permits tend to be too general in terms of time and location, giving such broad margin of interpretation that makes it barely possible to implement in favor of the natural resource.
- DNER ranger: with a very limited numbers of guards to patrol the zone, the supervision of the reserve in the Culebra region is very poor.
- According to a ranger official, there are 32 (including lieutenants sergeants, and officials) rangers responsible for the eastern region of Puerto Rico, covering more than a thousand miles, which include the islands-municipalities of Vieques and Culebra. Vigilance officials perceive that this is a small number for such a great distance. As part of their daily tasks, rangers must cover the coastal and maritime zones of the whole eastern region of Puerto Rico (northeastern, eastern and southeastern), which covers the territory of fifteen municipalities. Furthermore, they must also make sure that rivers are not being polluted and trees cut without the required permits. They must also monitor the hunting grounds. Therefore, there is a consensus among rangers that the lack of personnel is one of the main obstacles for implementing the laws and regulations covering CEN Marino.
- Also, the lack of equipment is a great obstacle for the vigilance of the area. Having only two functioning boats to cover the whole region, the enforcement of regulations in the reserves becomes highly problematic. In other words, DNER's rangers cannot monitor the reserves on a daily basis.

Participatory issues:

- Teachers - Meetings should also promote the development of solutions, and not just the enunciation of problems and concerns.



Otherwise, the meetings could turn into a “complain festival”, with no engagement from local actors in the resolution process.

- There is a common perception that city hall, in Culebra, does not participate in much of the activities related with the management of the reserve.
- Many community stakeholders resent the lack of participation of DNER’ representatives in public hearings.
- There is a common agreement among stakeholders about the lack of local fishers’ participation in the decisions that pertain to the fisheries and the management of the reserve. Local fishers’ engagement in the different processes related to the management of natural resources in CEN Marino is crucial and needs to be established.
- However, there are occasions when different stakeholders collaborate in the protection of the reserve. For example, there are concessionaries that notify rangers about illegal activities that they notice during their visits. This type of relations must be documented and analyzed since they could shed light to the formation of broader formal, and informal, on the ground collaboration in the management of the reserves.

Governance:

- Many are under the impression that Fish and Wildlife is the one in charge of the reserve. They receive concerns from community members. This suggests confusion around the structure of governance in the reserve.

Suggestions for the future management of the zone:

- NGO - The limits of the reserves should be clear for everyone: "you can't enforce it if you don't know the boundaries."
- DNER official patrol: there is need for clarity and comprehensiveness in terms of the management plan and the laws to be implemented. Rangers are unable to guarantee full protection when the laws are not clear and comprehensive.
- Rangers perceive that there is a lack of necessary resources – like a boat - for a responsible and satisfactory management of the reserve.



- Urgent need to hire a full-time biologist for Culebra. The lack of experts makes it more difficult for rangers to clarify doubts about the impacts of some activities. According to DNER rangers, there are not enough personnel.
- Language and translation: For example, in Culebra, a significant community of Anglo-Americans lives in the periphery of the reserve, yet they don't have access to English documents that explain the different laws and regulations that pertains to the area. Also, the great majority of tourist operators in the area are English-speakers. Therefore, there is a need for bilingual material.
- DNER official patrol: The territory that forms part of the reserve must be clearly marked. There is confusion about the limits and reach of the reserve. This makes it more difficult to manage. In other words, the reserve should be clearly defined not just in the maps but also in the actual 'ground'/'water'.
- Rangers need more training related to educational workshops on natural resources (their impact, importance, etc.).

Concluding remarks:

There is still more data to be coded and collected that will be classified and analyzed in order to answer our main research questions: How does the main stakeholders perceive the use and management of natural resources in the maritime zone of the North East Corridor? Are there conflicts and contradictions that emerge from different practices, dynamics, and worldviews among different stakeholders? What proposals and perspectives on the future management of C.E.N. Marino do stakeholders hold? The report above provides an array of perceptions and suggestions from different groups about participatory issues, governance, and conflicts, meaningful for the future management of C.E.N. Marino. This information allows us to identify questions and clarify the data gaps that we need to address in the design of our further research and analysis.